

## WHAT IS CLAIMED IS:

1. A coating method comprising:

supplying a coating material to a coating material  
5 spattering means from a coating material source through  
a paint supply passage;

spattering the coating material in a condition easy  
to atomize outwardly from the coating material  
spattering means; and

10 exerting supersonic vibration to the coating  
material immediately after spattered outwardly from the  
coating material spattering means.

2. The coating method according to claim 1 wherein  
15 the coating material spattering means is a rotary  
atomizing head driven to rotate and centrifugally  
spatter the coating material supplied thereto radially  
outwardly, and wherein the supersonic vibration is  
exerted toward the coating material spattered from the  
20 rotary atomizing head in a region around and adjacent to  
the outer circumferential perimeter of the rotary  
atomizing head.

3. The coating method according to claim 1 wherein  
25 the coating material spattering means is a paint nozzle,  
and wherein the supersonic vibration is exerted  
diagonally forward from around the paint nozzle toward a  
region close to the paint nozzle.

30 4. The coating method according to claim 3 wherein  
the coating material is expelled from the paint nozzle  
without atomizing air.

5. The coating method according to claim 3 wherein  
35 the coating material is expelled from the paint nozzle  
together with atomizing air.

6. The coating method according to claim 1 wherein the coating material spattering means is an opening capable of hydraulic atomization, and wherein the supersonic vibration is exerted diagonally forward from  
5 around the opening toward a region close to the opening.

7. An atomizer comprising:  
a coating material source;  
a rotary atomizing head driven to rotate;  
10 a paint supply pipe for supplying a coating material to the rotary atomizing head from the coating material source; and

an annular vibration plane located near the outer circumferential perimeter of the rotary atomizing head  
15 to encircle the outer circumferential perimeter of the rotary atomizing head to exert supersonic vibration forward,

wherein the supersonic vibration is imparted to the coating material immediately after being spattered from  
20 the rotary atomizing head to atomize the coating material and drive the atomized coating material forward.

8. The atomizer according to claim 7 wherein the annular vibration plane is an inclined plane which  
25 increases the diameter forward.

9. The atomizer according to claim 7 wherein the vibration plane and the rotary atomizing head are adjustable in relative position in the front-and-rear  
30 direction.

10. The atomizer according to claim 7 wherein the annular vibration plane is composed of a plurality of segments annularly aligned in the circumferential  
35 direction.

11. The atomizer according to claim 7 wherein the

atomizer is an electrostatic atomizer for depositing an electrically charged coating material on a work held in a ground potential.

- 5           12. An atomizer comprising:  
            a coating material source;  
            a coating material spattering means for spattering  
a coating material in a condition easy to atomize;  
            a paint supply pipe for supplying the coating  
10 material from the coating material source to the coating  
material spattering means; and  
            an annular vibration plane located to encircle the  
coating material spattering means to exert supersonic  
vibration diagonally forward to concentrate the  
15 supersonic vibration to a region adjacent to the coating  
material spattering means,  
            wherein the supersonic vibration imparts the  
coating material immediately after spattered from the  
coating material spattering means to atomize the coating  
20 material.

13. The atomizer according to claim 12 wherein the  
annular vibration plane exerts the supersonic vibration  
diagonally forward from around the coating material  
25 spattering means toward a region close to the coating  
material spattering means.

14. The atomizer according to claim 12 wherein the  
coating material spattering means includes a paint  
30 nozzle, and wherein the coating material is expelled  
from the nozzle without atomizing air.

15. The atomizer according to claim 12 wherein the  
coating material spattering means includes a paint  
35 nozzle, and wherein the coating material is expelled  
from the paint nozzle together with atomizing air.

16. The atomizer according to claim 12 wherein the coating material spattering means includes a coating material opening capable of hydraulic atomization.

5        17. The atomizer according to claim 12 wherein the annular vibration plane is composed of a plurality of segments annularly aligned in the circumferential direction.

10       18. The atomizer according to claim 12 wherein the atomizer is an electrostatic atomizer for depositing an electrically charged coating material onto a work held in a ground potential.